anxiety and depression with HADS and a sense of coherence with SOC-29.

Results: Socio-demographic analysis showed difficult financial conditions of families of CHD adolescents and the frequent need to pass the school due to children illness. The results of semi-structured interviews showed that 24 (40%) of CHD teens didn't know exactly a clinical diagnosis, and 37 (61.67%) patients did not know for what purpose they are taking drugs. 45 (75%) of patients didn't know what physical exercise allowed to them. Only 7 (11.67%) adolescents raised with a physician issues related to adulthood, namely, sex, contraception, career or professional opportunities and the need for a future transition to the adult cardiologist. 58 (96.67%) CHD teens would like to attend a support group of peers and 27 (45%) adolescents expressed a desire to have a consultation with a psychologist without parents presence.

Psychodiagnostic results have shown that adolescents with CHD had low rates in almost all domains of quality of life. The study revealed that 41.67% of adolescents with CHD had elevated levels of anxiety and 18.33% patients had symptoms of depression. Also the study was found positive moderate relationships between physical functioning domain of quality of life and adolescents' knowledge about CHD diagnosis, understanding drug prescriptions, allowed physical activity ($r = 0.45$, $p < 0.01$), and general health perceptions domain of quality of life and strong sense of coherence ($r = 0.39$, $p < 0.05$), the presence of anxiety and/or depression and sense of coherence ($r = -0.75$, $p < 0.01$).

Conclusion: Thus this study revealed determinants of poor quality of life of adolescents with CHD such as 1) the low level of adolescents knowledge about their CHD pathology and necessary medical treatment, as well as, allowed physical activity; 2) the elevated level of anxiety and depression; 3) weak sense of coherence with poor abilities to manage and comprehend the situation.

P.7.a.008 Understanding the role of the amygdala in attention-deficit/hyperactivity disorder: association between brain structure, function and delay aversion

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Background: Neuroimaging studies have demonstrated structural alterations in brain regions constituting part of the affective network in individuals with attention deficit/hyperactivity disorder (ADHD). The strongest effect size compared to controls was found for the amygdala, a key component of the brain circuit responsible for processing and experience of negative emotions. Functional magnetic resonance imaging (MRI) studies have associated amygdala hyper-activation as a mediating factor in delay aversion. This negative emotional experience toward delay is considered to play a crucial role in the motivation of persons with ADHD. By using voxel-based morphometry of the grey matter, we investigated the link between structural and functional neuroanatomy, and self-reported measures of delay aversion in ADHD.

Methods: Structural T1-weighted 3T MRI scans from 28 right-handed male adolescents with combined type ADHD and 32 age-matched (10–18 years) controls were analysed using Computational Anatomy Toolbox 12. Groups were compared on grey matter volumes. Volumes in regions displaying group differences (FWE-corrected $p < 0.05$) were then correlated with delay aversion self-ratings and their neural activity measured in response to delay related cues in an fMRI task. Different cue types signaled three delay related consequences: one indicated that post-response delay occurred irrespective of response speed (CERTAIN DELAY), a second that delay would follow only when participants responded to late (CONDITIONAL DELAY), a third, that no delay would be imposed regardless of response speed (NO DELAY). The anticipatory brain responses were calculated for the CERTAIN DELAY > NO DELAY contrast in Statistical Parametric Mapping 12.

Results: No total intracranial volume, nor total grey matter differences were found between both groups. Adolescents with ADHD had significantly reduced volumes of the bilateral amygdala (Cohen's d left/right side = −0.64 and −0.75), parahippocampus (d = −0.53 and−0.61) and medial temporal gyrus extending anteriorly to the temporal pole (d = −1.00 and −1.01) compared to controls. Individuals with ADHD rated themselves as significantly ($p < 0.01$) more delay averse then controls. The amygdala volumes were significantly ($p < 0.01$) associated with the functional activity during the delay-related task (Pearson correlation left/right r = −0.35 and −0.32) and with their self-reported delay averse behaviour (r = −0.43 and −0.45).

Conclusion: Variations in amygdala structure and function are implicated in delay aversion in ADHD. Longitudinal studies are required to disentangle whether such structural alterations are a cause or an effect of delay aversion. From a clinical perspective, this association underlines how vital it is to take delay into account when trying to interpret what situations and experiences may provoke negative reactions in persons with ADHD. These negative feelings towards delay seem to occur regardless of the possibility of comorbid symptoms of emotional dysregulation in ADHD, as only 3 participants of the ADHD group showed oppositional defiant disorder comorbidity.

P.7.a.009 In a quest for autism spectrum disorders subgroups

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Introduction: Autism spectrum disorders (ASD) are defined by deficits in social-emotional reciprocity and nonverbal communicative behaviors, hyperreactivity or hyporeactivity to sensory input, which can be found in a range of neurodevelopmental disorders [1].

The etiology of ASD is multifactorial and incompletely elucidated, ASD being a result of the interaction between genetic vulnerability, inflammatory and immunologic dysfunction, oxidative stress and the action of toxic substances in the environment [2].